

REMARKS

Favorable reconsideration of this application in light of the following discussion is respectfully requested.

Claims 1-6, 8-11, 13, 14, and 22-37 are presently active in this case; Claims 1, 9, 11, and 13 having been amended and Claim 7 canceled by way of the present amendment. Claims 12 and 15-21 were canceled in a previous Amendment.

In the outstanding Office Action, Claims 1, 6, and 8-9 were rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,433,785 to Saito; Claims 2 and 3 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Saito as applied to Claims 1, 6 and 8-9, and further in view of U.S. Patent No. 5,286,296 to Sato et al., further in view of U.S. Patent No. 6,083,566 to Whitesell; Claims 4 and 5 are rejected under 35 U.S.C. §103(a) as being unpatentable over Saito as applied to Claims 1, 6, and 8-9, and further in view of U.S. Patent No. 4,389,970 to Edgerton; Claim 7 is rejected under 35 U.S.C. §103(a) as being unpatentable over Saito as applied to Claims 1, 6, and 8-9, and further in view of Japanese Patent Publication No. 07-142408 to Nakahigashi; Claim 10 is rejected under 35 U.S.C. §103(a) as being unpatentable over Saito as applied to Claims 1, 6 and 8-9, and further in view of U.S. Patent No. 5,735,961 to Shimada; Claims 11-13 were rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 5,433,785 to Saito in view of Japanese Patent Publication No. 07-142408 to Nakahigashi; Claim 14 is rejected under 35 U.S.C. §103(a) as being unpatentable over Saito and Nakahigashi as applied to Claims 11-13, and further in view of Shimada; Claims 15, 16, and 18 are rejected under 35 U.S.C. §103(a) as

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being unpatentable over U.S. Patent No. 5,433,785 to Saito in view of U.S. Patent No. 5,286,296 to Sato et al. and in view of Whitesell; Claim 17 is rejected under 35 U.S.C. §103(a) as being unpatentable over Saito, Sato et al., and Whitesell as applied to Claims 15, 16 and 18, and further in view of Nakahigashi; Claim 19 is rejected under 35 U.S.C. §103(a) as being unpatentable over Saito, Sato et al. and Whitesell as applied to Claims 15, 16, and 18, and further in view of Shimada; Claim 20 is rejected under 35 U.S.C. §103(a) as being unpatentable over Saito in view of Natahigashi; and Claim 21 is rejected under 35 U.S.C. §103(a) as being unpatentable over Saito and Nakahigashi as applied to Claim 20, and further in view of Whitesell.

First, Applicants wish to thank Examiner Moore for the September 10, 2003, telephone interview at which time the outstanding Restriction Requirement was discussed. During the discussion, Examiner Moore indicated that if an RCE were filed along with an Amendment canceling Claims 1-25, the Examiner would shift examination to Claims 26-37. Nevertheless, upon further consideration, Applicants prefer to address the rejection of Claims 1-21 in the previous Office Action. Moreover, with respect to the restriction requirement, Applicants wish to make the record clear that Claims 1-21 were originally elected for examination on the merits, and Claims 12 and 15-21 were canceled by way of the previous Office Action. Therefore, before entry of the present amendment, elected Claims 1-11 and 13-14 are pending for examination on the merits.

With regard to the rejection under 35 U.S.C. §112, second paragraph, Applicants acknowledge the inconsistency between the clean copy of Claim 13 and the marked-up copy

of Claim 13 in the Amendment filed April 16, 2003. Consistent with the examiner's position taken in the outstanding Official Action, Applicants assume that the clean copy of Claim 13 reflected the official status of the claim in the April 16, 2003 Amendment. Applicants have now amended Claim 13 to be in proper format, and the marked-up copy of this claim contained here is based on the clean copy of the claim included in the April 16, 2003, Amendment. Therefore, the rejection under 35 U.S.C. §112, second paragraph, is believed to be overcome.

Turning now to the merits, in order to expedite issuance of a patent in this case, Applicants have now amended Claims 1, 9, and 11 to clarify the patentable distinctions of the present invention over the cited references.

Specifically, Applicants' Claims 1 and 11, as amended, recite an apparatus disposed adjacent to a main transfer mechanism for processing a substrate one by one. The apparatus includes a heating process chamber in which a heating process is performed one by one for the substrate, and a load lock chamber integrally connected to the heating process chamber in a predetermined direction, having one opening closable with a shutter allowing the substrate to be transferred between the main transfer mechanism and the load lock mechanism, and controlling at least oxygen concentration and pressure. Also recited is a transfer arm having a temperature adjusting portion adjusting a temperature of the substrate placed thereon, capable of moving between the heating process chamber and the load lock chamber and transferring the substrate one by one between the heating process chamber and the load lock chamber, and transferring the substrate between the main transfer mechanism and the heating process

chamber through the opening. Finally, a gate valve shielding the heating process chamber from the load lock chamber is also recited.

Thus, Applicants have now amended independent Claims 1 and 11 to emphasize those features indicated by the outstanding Official Action as arguably distinguishable, but unclaimed.¹ That is, Claims 1 and 11, as amended, now clearly recited that the substrates are processed "one by one." This feature is supported by Applicants' specification at page 14, line 3, for example. Moreover, Applicants have amended Claims 1 and 11 to clarify that the transferring arm has a temperature adjusting portion adjusting a temperature of the substrate placed thereon.

In contrast, as discussed in the Amendment filed April 16, 2003, Saito discloses that wafers are processed by a plurality of units, in other words, the wafers are "transferred from the wafer cassettes to the wafer boat in the load lock chamber" (see col. 4, line 40 of Saito). On the contrary, the substrate of the present invention is processed one by one, as illustrated in the non-limiting example of Claim 5 and page 14, line 3 of the specification. Moreover, the cited reference to Nakahigashi discloses "forming a heater in the hand section of the substrate carrier robot which supports the substrate" (paragraph 19) so that "the substrate can be prevented from being cooled rapidly by the hand section" (paragraph 21). Applicants submit that this disclosure indicates that the heater in Nakahigashi is actually used to prevent adjusting the temperature of the substrate. Applicants respectfully submit that Nakahigashi

¹ See outstanding Official Action at "Response to Arguments," page 8, paragraph 50 – page 9, paragraph 56.

does not disclose or suggest deliberately adjusting the temperature of the substrate, as clearly recited in Claims 1 and 11.

Still further, Applicants note that Claim 11 also recites that the transfer mechanism actually cools the substrate. That is, the present invention is not intended for “preventing the substrate from being rapidly cooled by the hand section” as disclosed in Nakahigashi, rather the present invention is intended to cool the substrate on a transferring arm to the temperature of 15°C to 25°C as disclosed on page 23, line 27 – page 24, line 1 of the specification of the present invention. With such structure, the more precise control of the temperature becomes possible, which is a characteristic that is neither disclosed nor suggested by Nakahigashi. Thus, Claim 11 further patentably defines over the cited references.

Finally, the additional references cited in the outstanding Official Action do not correct the deficiencies of Sato and Nakahigashi. Specifically, the cited references to Sato, Whitesell, Edgerton, and Shimada are all cited as teaching limitations different from those distinguished above. Moreover, all of the references cited in the outstanding Official Action are directed to apparatuses for performing CVD, however, these present invention is related to an apparatus for performing SOD coding which forms an insulating film. Thus, the secondary references are not cited for and do not correct the deficiencies of Sato and Nakahigashi.

Thus, Applicants’ independent Claims 1 and 11, as amended, patentably define over the cited references. Moreover, as Claims 2-6 and 8-10 depend from Claim 1, and Claims 13-

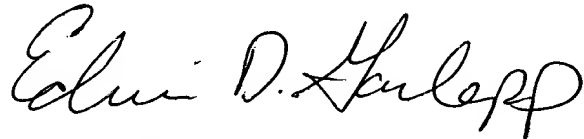
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14 depend from Claim 11, these dependent claims also patentably define over the cited references.

Consequently, in view of the present amendment, no further issues are believed to be outstanding in the present application, and the present application is believed to be in condition for formal Allowance. An early and favorable action is therefore respectfully requested.

Respectfully submitted,

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